ABSTRACT

An electronic junction of the present invention comprises: (a) a first conductive component comprising: (i) a substrate having a contact surface; and (ii) at least one layer of molecular units having first and second ends, wherein at least one layer of molecular units is attached through their first ends to the contact surface through a type of association selected from the group consisting of: covalent bonding and strong electronic coupling; and (b) a second conductive component in electrical contact with the second ends of at least one layer of molecular units, the second conductive component comprising at least one metal and at least one metal oxide, wherein at least one conductive component in electronic junction has an electrical property that changes in response to a stimulus.